

## Love for Frequent and Low Flow Activities in the United States and India

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### ABSTRACT

This study explored how much participants in the United States (US) and India loved activities that are inherently flow producing (Frequent Flow Activities) versus those that are not (Low Flow Activities). Frequent Flow Activities (FFA) typically possess the three antecedents of flow, namely clear and proximate goals, immediate feedback and a perceived balance of challenge and skill. By contrast, Low Flow Activities (LFA) are typically relaxing or enjoyable but not underpinned by these antecedents. In addition, this study explored whether love for FFA/LFA differed by age, gender and nationality, and whether love for FFA/LFA was positively related to various measures of wellbeing. Results indicate that neither age nor gender affected love for FFA/LFA. However, nationality did make a difference, in that Indian but not US participants loved FFA more than LFA. Finally, both FFA/LFA were significantly and positively related to a number of wellbeing measures. Implications and applications are discussed.

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### FLOW PSYCHOLOGY

For more than four decades, Csikszentmihalyi and colleagues have studied flow, a psychological state of complete absorption in a task that is predicated upon three conditions: clear and proximate goals, immediate feedback and a perceived balance of challenge and skill (Csikszentmihalyi, 1990; Nakamura & Csikszentmihalyi, 2002). Flow is characterized by focus and concentration, being present, knowing what to do at each moment, a merging of action and awareness, the slowing down or speeding up of time, the paradox of letting go yet feeling in control, not fearing failure and lack of self-consciousness (Csikszentmihalyi & Csikszentmihalyi, 1988). Flow is autotelic in nature, meaning that the experience is its own reward (Csikszentmihalyi, 1990). As such, people are typically motivated to replicate the flow experience. However, since flow requires a balance of skill and challenge, an individual must continue to resist entropy, develop their skills and seek out

new challenges in order to stay in flow. Consequently, flow is associated with increased self-efficacy, improved skill and the search for greater challenges, which ultimately produces increased psychological complexity (the ability to express a range of human characteristics) (Csikszentmihalyi, 1997; Csikszentmihalyi & Rathunde, 1998), elite performance and creativity (Csikszentmihalyi, Montijo, & Mouton, in press).

Csikszentmihalyi found that some activities are more likely to facilitate the flow state than others, as set out in Table 1. Frequent Flow Activities (FFA), such as playing sports, creating art or music, and playing games facilitate flow by design, in that they have clear and proximate goals, involve immediate feedback, and require a balance of skill and challenge (Csikszentmihalyi, 1990, 1997). For example, playing an instrument involves clear and proximate goals, such as correctly playing an arrangement of notes in order to create a desired melody. This activity provides immediate feedback to the musician via either pleasant or unpleasant sounds emanating from the instrument. And the activity promotes the acquisition of increasing skill in order to play more and more sophisticated songs. FFA promote learning, growth, and psychological complexity, and as a result, activities that are structured in this manner tend to be selected by and persist in the culture (Delle Fave, Massimini, & Bassi, 2011). Indeed, it is difficult to think of a society without sports, art, music and games. That being said, not all FFA are considered fun and enjoyable all of the time (e.g. work or studying). Nevertheless, paradoxically people across cultures report having many of their most rewarding moments while working hard in their vocational or academic pursuits (Csikszentmihalyi & Csikszentmihalyi, 1988; Delle Fave, Massimini, & Bassi, 2011).

**Table 1**  
**Activities coded as “Frequent Flow,” “Sometimes Flow,” and “Low Flow” by Csikszentmihalyi (1997, p. 35 - 48)**

<b>Frequent Flow</b>		<b>Sometimes Flow</b>		<b>Low Flow</b>	
1.	Work	1.	Cooking	1.	Eating
2.	Sports	2.	Socializing	2.	TV watching
3.	Art	3.	Sex/Romance	3.	Personal care
4.	Music	4.	Interacting with others	4.	Passive leisure
5.	Driving	5.	Nature	5.	Younger: church, school
6.	Games			6.	Drugs
7.	Active leisure			7.	Alcohol
8.	Talking to friends			8.	Listening to music
9.	Younger: Public places			9.	No skill development
10.	Adults: Leisure w/ friends				
11.	Women: out of the house				
12.	Men: out of public				
13.	Hobbies				
14.	High skill development				

Low Flow Activities (LFA), on the other hand, tend to involve taking care of biological needs (e.g. eating), maintenance needs (e.g. personal hygiene) and passive leisure (e.g. consuming drugs or alcohol, watching TV and listening to music). While people often report being happy when engaged in these pleasurable and/or relaxing LFA, they are subject to diminishing returns. Unlike FFA, these activities do not typically elevate the quality of life, primarily because they do not provide opportunities for skill development nor do they motivate an individual to seek greater challenges (Csikszentmihalyi, 1997).

### **Flow and Creativity**

Any creative endeavour requires the individual to invest considerable attention and effort into the acquisition and application of a set of knowledge, skills and abilities, often for little to no extrinsic reward. Csikszentmihalyi's (1996) study of nearly 100 creative exemplars, including Nobel Peace Prize winners, business leaders and eminent scientists, revealed that the will to be creative was generated and sustained from a deep sense of enjoyment in the performance of the task itself, rather than the end result. These distinguished individuals were not motivated by extrinsic rewards such as fame, money or recognition. Instead, they revealed a burning desire to solve problems, because to do so was fun and worthwhile. In other words, for these creative exemplars, the drive to persist was derived from the experiential rewards of their creative work.

The intrinsic motivation provided by the flow experience is central to creativity partly because of the importance of deliberate practice in attaining higher levels of performance and expertise (Csikszentmihalyi et al., in press). Scientists and practitioners estimate that it takes approximately 10,000 hours of practice to achieve mastery of a particular domain (Ericsson, 1996) and some scholars suggest it may take even longer to achieve creative prominence (Kaufman & Kaufman, 2007). Thus, developing mastery and expertise in a domain depends on hours of deliberate practice, which in turn depends on high levels of motivation (Ericsson, 2004). Flow is rewarding and enjoyable, ensuring that individuals are motivated to use skills and meet challenges in the environment. Then, as skills grow, more challenging opportunities are needed to gain the experiential rewards associated with flow. Therefore, flow is the stimulating force driving the individual to want to practice, perform and be creative. Today, researchers widely accept that expertise (Hambrick, Macnamara, Campitelli, Ullén, & Mosing, 2016), giftedness (Subotnik, Olszewski-Kubilius, & Worrell, 2011) and creative performance (Simonton, 2014) are developable, and that optimal development depends primarily on the quality of deliberate practice (Simonton, 2014).

## Love for FFA and LFA

Love is a complex psychological construct that has multiple definitions, meanings and measures (Berscheid, 2010). The majority of research on love has focused on interpersonal relationships, such as romantic love, friendship, parent-child bonds, and love of all beings (Weis, 2006). However, in the last ten years, new research has emerged suggesting that love is also important in the context of learning (e.g. Mouton & Montijo, 2016) and in developing passion for activities that define the self (Vallerand, 2015).

The authors are not aware of any previous studies that have explored the relationship between love and flow activities or, specifically, whether people *love* FFA more than LFA. Experience sampling method (ESM) studies have shown that people are least *happy* when working, studying and doing housework (all of which can be FFA), and are happiest during active leisure such as playing sports or engaging in hobbies (FFA) and passive leisure activities such as eating and socializing (LFA) (Csikszentmihalyi, 1997). In addition, *passion* for activities has received much attention in the positive psychology literature (Vallerand et al., 2003; Vallerand, 2015). Passion has been defined as “a strong inclination towards a self-defining activity *that people love*, that they consider important, and in which they devote significant amounts of time and energy” (Vallerand et al., 2007, p. 124, emphasis added). Vallerand theorizes that passion includes “the few activities that make us thrive in our lives” (2012, p. 49). People typically report passion for a wide variety of activities, most typically FFA such as sports, games, dramatic arts, music, work and education (Vallerand, 2012, 2015; Vallerand et al., 2003). A positive relationship between harmonious passion and flow is well established (e.g. Vallerand et al., 2007) and research has shown that harmonious passion for FFA is predictive of physical health, mental well-being and positive relationships (Vallerand, 2012, 2015). However, people also report passion for LFA such as listening to music, watching movies, reading and being with friends and family (Vallerand, 2012, 2015; Vallerand et al., 2003). Therefore, the current literature suggests that people can be passionate about both FFA and LFA.

What about love for activities that do not amount to a passion (i.e. activities that are loved but do not become part of the individual’s identity)? In a recent cross-cultural, qualitative study, the authors asked 150 people in 22 countries (*inter alia*), “What do you love?” and “What is a great passion in your life?” (Mouton & Montijo, 2016). For both love and passion, *other people* (friends, family, strangers and people in general), and *learning and growing* were the top two themes to emerge from the data. *Learning and growing* included sub-themes of (a) learning a subject or craft, (b) striving for goals (including through sport), and (c) travelling and/or leaving home, often for the first time. Therefore, while participants in the study frequently reported love and passion for other people, in-

cluding spending time with other people (LFA), they also frequently reported love and passion for activities that facilitated learning and growing - i.e. FFA.

We might expect people to love FFA more than LFA for three reasons. First, there is arguably an evolutionary advantage for the individual across the lifespan to develop a love for activities that facilitate learning, growth, psychological complexity and self-actualization (Csikszentmihalyi & Asakawa, 2016). Arguably, more complex individuals are better able to adapt to a changing environment and, therefore, flow-producing activities are naturally selected by societies in order to maximize individuals' evolutionary fitness. Second, a person who experiences flow is likely to want to replicate this enjoyable subjective experience more than other experiences (Massimini, Csikszentmihalyi, & Delle Fave, 1988). Flow is therefore self-reinforcing. Third, recent research suggests that the number of dopamine receptors in the brain is positively related to flow proneness (de Manzano, Cervenka, Jucaite, Hellenäs, Farde, & Ullén, 2013). Therefore, the brain chemistry of some individuals may predispose them to loving FFA more than other activities.

However, there are also arguments in favour of people loving LFA more than FFA. First, neuroscience research on love has reported a relationship between pair-bonding and the reward centres of the brain which involve the production of dopamine and oxytocin (Ortigue, Bianchi-Demicheli, Patel, Frum, & Lewis, 2010). It is, therefore, possible that love is tied to the reward centres of the brain, which have evolved over time to primarily serve lower order biological needs of nourishment and reproduction, and lower order psychological needs of safety and belonging (as conceived by Maslow, 1943). In other words, perhaps we have evolved to love things that help us survive and reproduce and are rewarded by dopamine and oxytocin releases when we engage in these things. It would follow then that individuals would love LFA such as eating and socializing more than FFA that require attention and energy, are less immediately pleasurable, and serve higher order needs for growth, psychological complexity and self-actualization. Of course, neither biological genes nor cultural memes (units of cultural information) operate with awareness of what may be optimal for the individual's development. Rather genes and memes are engineered to ensure their own survival (Dawkins, 1976) without any concern for the individual's self-actualization (see also Csikszentmihalyi, 1990).

Second, flow requires attention and energy. In order to enter the flow state, the individual must overcome inertia and entropy, as well as resist distractions in daily life. Modern society has made it more difficult to avoid distractions that compete for our attention (such as advertising and media), which typically transmit the cultural script that LFA such as socializing, eating and drinking, relaxing or watching TV are superior to FFA. Thus, it is possible that some people struggle to overcome distraction and/or desire being comfortable rather than challenged, thereby loving LFA more than FFA, despite the clear advantages of the latter.

Third, Peifer and colleagues have reported an inverted U relationship between cortisol and flow (Peifer, Schulz, Schächinger, Baumann, & Antoni, 2014; see also Keller, 2016), much like the Yerkes-Dodson Law which states that there is an inverted U relationship between arousal and motivation (Yerkes & Dodson, 1908). Peifer and colleagues (2014) found that flow increased with increasing levels of cortisol but only up to a point, at which flow declined with additional exposures to cortisol. Therefore, when individuals are exposed to too many environmental stresses and/or are unable to manage this stress, it becomes more difficult to enter the flow state. As such, it is possible that FFA (which are typically high challenge, high skill activities) may be perceived by individuals under stress to be unappealing and therefore loved less than LFA that are not associated with higher stress levels. Previous researchers have suggested that high external demands and ego threats are negatively related to intrinsic motivation and flow, unless the individual's perceived skill is high compared to the difficulty of the task, in which case these demands and threats may promote flow (Deci & Ryan, 2000; Engeser & Rheinberg, 2008).

In summary, the current literature provides evidence in favour of people loving FFA more than LFA. However, the literature also includes evidence in the opposite direction. On balance, we might expect that people will report loving FFA more frequently than LFA since FFA are related to learning, growth, wellbeing and harmonious passion.

### **Cultural Variations in Flow**

Four decades of research suggests that flow is a universal optimal experience that is recognized in every society in which it has been studied, from North America to Europe to the Far East. In addition, descriptions of the phenomenology of flow have proven to be remarkably consistent across a variety of demographic factors, including age, gender, culture, ethnicity and socio-economic status (Bassi & Delle Fave, 2004; Csikszentmihalyi & Asakawa, 2016; Csikszentmihalyi & Csikszentmihalyi, 1988; Delle Fave et al., 2011; Moneta, 2004; Nakamura & Csikszentmihalyi, 2002; Ullén, de Manzano, Almeida, Magnusson, Pedersen, Nakamura, & ... Madison, 2012). Furthermore, there is evidence that the pre-conditions of flow (clear and proximate goals, immediate feedback, and a perceived balance of challenge and skill) are universal (Csikszentmihalyi, 2014; Csikszentmihalyi & Csikszentmihalyi, 1988; Delle Fave, Massimini, & Bassi, 2011).

In short, as Csikszentmihalyi (1988) put it:

This uniformity in the *structure* of the [flow] experience does not imply a similarity in the *content* of the activities that produce the experience. Cultures differ from each other in the opportunities for action that they make available, and therefore in the forms of flow they make possible (p. 366).

Previous literature has compared flow activities and experiences across cultures. For example, Delle Fave and colleagues (2011) examined the responses of 870 participants aged 15 to 78 to The Flow Questionnaire. Participants were from Western (Italy) as well as non-Western countries (i.e. India, Indonesia, Iran, Ivory Coast, Ghana, Morocco, Tunisia, Philippines, Somalia, Thailand, and cultural minorities in Europe and North America such as the Navajo in the US and Rom Gypsies in Italy). Participants were asked to associate their flow experiences with one or more activities, and to indicate which of these activities they associated with the most pervasive optimal experience. The data indicated that both groups identified productive activities (work and study) and leisure (both active leisure and, to a lesser extent, passive leisure, such as reading, relaxing and use of media) as the most facilitative of flow experiences. Therefore, in line with previous research, participants tended to associate flow experiences with FFA most frequently. However, there were two statistically significant differences between the groups. First, significantly more Western participants reported leisure activities as facilitating flow. Second, significantly more non-Western participants reported work and introspection (thinking, daydreaming, enjoying solitude, prayer and meditation) as producing flow (although just 6% of the total sample fell into the introspection category). The authors in this study suggested that the collectivist orientation of non-Western societies may release people from the emphasis on personal achievement and performance inherent in individualistic cultures. This in turn may facilitate a focus on intrinsic motivation and the enjoyment of skill development that characterizes flow. Csikszentmihalyi (1990) suggests that in Western nations flow is typically experienced in activities that involve external stimuli, while Eastern cultures have cultivated flow producing practices that involve training the mind and focusing attention on the human experience for its own sake. Another cultural factor that may influence the types of flow activities that are selected is the collectivist/individualistic dichotomy.

In short, the literature suggests that the pre-conditions and subjective experience of flow are consistent if not universal across cultures (Delle Fave, Massimini, & Bassi, 2011). However, the socio-cultural environment in which people find themselves influences the types of activities that are available, and therefore the types of activities that people choose to participate in for their flow-producing elements. In addition, there is some evidence to suggest that people in Western or modernizing cultures may gravitate to LFA (particularly passive leisure) more readily than people from Eastern and/or collectivist cultures, although the evidence on this point is certainly not conclusive.

### **Age and Flow**

As for other demographics, research suggests that the antecedents and phenomenology of flow, as well as flow proneness is relatively consistent across the lifespan

(Csikszentmihalyi & Csikszentmihalyi, 1988; Teng, 2011). For example, in a recent study the flow state was positively associated with activities considered by the participant to be high in effort and enjoyment. No age differences were found in this regard amongst participants aged 21 to 39 years old in a multinational sample (Mao, Roberts, & Bonaiuto, 2016). On the other hand, there is some evidence that dopamine receptor levels can decline with age, which in turn may decrease the likelihood of experiencing flow as we get older (de Manzano et al., 2013).

In terms of flow activities, as is the case with culture, the activities that are available and are chosen for their flow-producing qualities might vary with age. For example, middle adults tend to work more than emerging adults and older adults, and may consequently report experiences of flow during work-related activities more frequently. By contrast, emerging adults and older generations may report experiencing flow during leisure activities more often than middle adults do (Csikszentmihalyi & Csikszentmihalyi, 1988; Delle Fave & Massimini, 1988). There is also evidence of cohort effects. For example, Delle Fave and colleagues have noted changes in preferred flow activities in societies undergoing modernization. In one study, different generations in the Italian Alps differed in terms of the flow-producing activities they engaged in. Middle adults and older adults experienced flow in traditional work, such as tilling fields and knitting, and active leisure activities, such as walking in the countryside and dancing. By contrast, younger cohorts referred to more modern activities, such as going to the disco and ice-skating (Delle Fave & Massimini, 1988; see Delle Fave, Massimini, & Bassi, 2011 for a review).

### **Gender and Flow**

Previous studies have typically found no significant differences between men and women in terms of the antecedents and phenomenology of flow (e.g. Murcia, Gimeno, & Coll, 2008). For example, in a recent study the flow state was positively associated with activities considered by the participant to be high in effort and enjoyment. No gender differences were found in this regard (Mao, Roberts, & Bonaiuto, 2016). The evidence in terms of flow proneness is less clear. Some studies have found no gender differences in flow proneness or dopamine receptors after controlling for age (de Manzano, Cervenka, Jucaite, Hellenäs, Farde, & Ullén, 2013). However, other studies suggest that a gender difference might be at play. For example, in a recent study no significant gender differences were found with respect to dispositional flow in US collegiate athletes. However, in the case of Chinese collegiate athletes, male participants had significantly higher dispositional flow scores than their female counterparts (Liu, Ji, & Watson, 2015).

In terms of flow activities, Delle Fave and colleagues found no gender differences in the types of flow activities reported by men and women in both a Western and a non-

Western sample, with both sexes typically describing productive and leisure activities (Delle Fave, Massimini, & Bassi, 2011). However, as is the case with culture and age, the types of activities chosen for their flow-producing qualities might vary between men and women, due to variations in interest or access (e.g. some activities such as American football are traditionally played by men, while the parallel bars are a gymnastic event that women usually compete in). Gender differences have been noted in terms of the leisure activities that the sexes spend time on. Men primarily spend their free time engaging in sports, playing games and watching TV, while women typically spend their free time on hobbies and interactions with others (see Delle Fave, Massimini, & Bassi, 2011 for a review).

### **Love of Flow Activities and Wellbeing**

A large body of research across the lifespan suggests that love (Reis & Aron, 2008) harmonious passion (Vallerand, 2015) and flow (see Csikszentmihalyi, 2014 for a review) are positively related to various measures of wellbeing. It would therefore seem to follow from previous research that love (or passion) for FFA would be positively associated with wellbeing measures also. However, it is unclear from the current literature whether love for LFA would yield similar results. It is possible that love for these activities would promote positive outcomes, but that engaging in LFA might moderate any such positive effects.

### **The Current Study**

The current study explored the following questions: (1) whether participants loved FFA more than LFA, (2) whether there was any difference between US and Indian participants in love for FFA/LFA, (3) whether there was any relationship between love for FFA/LFA and age, (4) whether there was any difference between age cohorts in love for FFA/LFA, (5) whether there was any difference between men and women in love for FFA/LFA, and (6) whether love for FFA and LFA was positively related to measures of wellbeing.

In order to clarify the equivocal findings in previous research, the following hypotheses were tested using samples from the US and India.

*Hypothesis 1:* In both samples participants would report significantly greater love for FFA than for LFA.

*Hypothesis 2(a):* There would be a statistically significant difference between US and Indian participants in love for FFA, such that Indian participants would report greater love for these activities than US participants.

*Hypothesis 2(b):* There would be a statistically significant difference between US and Indian participants in love for LFA, such that US participants would report greater love for these activities than Indian participants.

*Hypothesis 3(a):* In both samples there would be a statistically significant negative relationship between love for FFA and age.

*Hypothesis 3(b):* In both samples there would be a statistically significant positive relationship between love for LFA and age.

*Hypothesis 4(a):* In both samples there would be a statistically significant difference between age cohorts in love for FFA, such that younger cohorts would report greater love for these activities than older cohorts.

*Hypothesis 4(b):* In both samples there would be a statistically significant difference between age cohorts in love for LFA such that older cohorts would report greater love for these activities than younger cohorts.

*Hypothesis 5(a):* In both samples there would be a statistically significant difference between men and women in love for FFA, such that men would have higher scores than women.

*Hypothesis 5(b):* In both samples there would be a statistically significant difference between men and women in love for LFA, such that women would have higher scores than men.

*Hypothesis 6(a):* In both samples love for FFA would be significantly and positively related to:

- i. Satisfaction with life
- ii. Subjective health
- iii. Subjective happiness
- iv. Presence of meaning

*Hypothesis 6(b):* In both samples love for LFA would be significantly and negatively related to:

- i. Satisfaction with life
- ii. Subjective health
- iii. Subjective happiness
- iv. Presence of meaning

## METHODS

### Pilot Study

The first author was part of a graduate class which undertook pilot interviews with 20 adults in the US. Participants were given the following prompt and asked the following question:

I am part of a group of students investigating what it is that we love most in our lives. Most people agree that love is such an important part of life, yet psychologists still know very little about it. When we say love, we don't necessarily mean anything romantic. We love people, but we also love all sorts of things, from pets to sunsets.

Please take a moment to think about your life - what comes to mind when I ask you, "What do you love?"

From the responses to this question a list of activities that people said they loved was generated, and a survey approximately 25 minutes in length was created for the present study.

### **Participants**

Participants in the current study were recruited from Amazon's MTurk, an online platform for sourcing participants to complete certain tasks, such as surveys (see Buhrmester, Kwang, & Gosling, 2011). In order to participate in the study, participants were required to be 18 years or older and registered as an MTurk worker. There is evidence that data obtained through MTurk compares favourably with data obtained through more traditional social science methods (Casler, Bickel, & Hackett, 2013) and that MTurk workers are more attentive than traditional in-person participants (Hauser & Schwartz, 2015). In addition, Brawley and Pury (2016) examined job satisfaction and turnover in MTurk workers from the US and India and found evidence that these workers functioned similarly to more traditional types of employees. In particular, job satisfaction and turnover were predicted by intrinsic motivation, a key component of flow. The data were thoroughly cleaned, excluding participants who did not meet the eligibility criteria, those who did not complete the consent form, and those who provided nonsensical responses.

Following data cleaning, 348 participants were retained for analysis, with 206 from the US and 142 from India. Participants ranged in age from 18 to 68 in the US ( $M = 34.61$ ,  $SD = 12.82$ ) and from 21 to 78 in India ( $M = 30.13$ ,  $SD = 9.33$ ). About three quarters of US participants identified as White/Caucasian, while almost all participants in India identified as Asian/Asian Indian. The US sample was skewed in favour of females and the Indian sample was skewed in favour of males. One participant in the US identified as transgender and one participant in India did not indicate their gender. Due to the small sample size of this "other" category, these two participants were excluded from subsequent gender analyses. Most participants indicated that they had at least some college education, and most participants were employed (in a variety of occupations). Just over half of participants in each sample were married or in a stable relationship.

### **Measures**

As mentioned, a list of activities that people might love was generated from the pilot study. Participants in the current study were asked to rate how much they loved each of these activities on a 5-point Likert scale from "1 - Neutral/Do not love" to "5 - Very strongly love". A sixth option was given as "Not Applicable" but these cases were subsequently excluded from analysis given potential overlaps with the "1 - Neutral" anchor. Subsequent to data collection, the authors coded each of the listed activities as "Frequent Flow", "Sometimes Flow" or "Low Flow" activities (as indicated in Table 2). These codes were

based on Csikszentmihalyi's (1997) classification of activities along the same lines (see Table 1), and the consideration that FFA typically provide opportunities for learning and growth (through matching skills to challenges), while LFA do not. "Sometimes Flow" activities were excluded from further analysis in the current study so as to distinguish between activities that are frequently associated with the flow state and those that are not. The average love score for all FFA and for all LFA was computed for each participant and used in subsequent analyses.

**Table 2**  
**Activities coded as "Frequent Flow," "Sometimes Flow," and "Low Flow" in the present study based on classifications by Csikszentmihalyi (1997)**

Frequent Flow	Sometimes Flow	Low Flow
1. My job	1. Making other people laugh	1. Having a meal with family
2. Volunteering	2. Conversation with strangers	2. Sweets
3. Exercising at the gym	3. Celebrations	3. Watching TV with others
4. Exercising outdoors	4. Conversation with loved ones	4. Hot bath / shower
5. Playing sports with others	5. Laughing	5. Shopping
6. Playing an instrument	6. Supporting others	6. Relaxing
7. Writing	7. Reading	7. Tobacco
8. Hobbies	8. Playing video games	8. Alcoholic beverages
9. Accomplishing a goal	9. Walking	9. Listening to music
10. Learning something new	10. Travelling	

Participants were also asked to complete a number of validated scales that measure aspects of wellbeing, as set out below.

**Satisfaction with Life Scale (SWLS).** The SWLS (Diener, Emmons, Larsen, & Griffin, 1985) assesses an individual's personal evaluation of her or his life satisfaction. The scale is comprised of five items (e.g. "In most ways my life is close to my ideal"), which are rated on a 7-point Likert scale ranging from "1 - strongly disagree" to "7 - strongly agree". The scale has been found to have high internal consistency with the coefficient alpha ranging from 0.79 to 0.89 (Pavot & Diener, 2008). Samples of college students have produced average scores slightly above neutral ( $M = 23.9$  out of 35) and samples of midlife and older adults have produced scores ranging from 23.6 to 27.9 (George, 1991; Blais et al., 1989; as cited in Pavot & Diener, 2008).

**Subjective health rating (SHR).** Participants were asked to rate their health at the present time on a 5-point Likert scale ranging from "1 - excellent" to "5 - poor". These items were reverse coded for statistical analysis. Previous research has found health to be an important factor in subjective well-being analyses (Okun, Stock, Haring, & Witter, 1984).

**Subjective Happiness Scale (SHS).** The SHS is a four-item measure of enduring, subjective happiness (e.g. “In general, I consider myself: 1 - not a very happy person...7 - a very happy person”) (Lyubomirsky & Lepper, 1999). Ratings are based on a 7-point Likert scale with higher ratings reflecting greater happiness. A 2010 study found high internal consistency with a coefficient alpha of .91 (Schueller, & Seligman, 2010).

**Presence and search for meaning.** The Meaning in Life Questionnaire (MLQ) is a reliable (Steger, Frazier, Oishi & Kaler, 2006), 10-item measure designed to assess the presence of, and search for, meaning in life. The presence of meaning (MLQ-P) and search for meaning in life (MLQ-S) subscales are each composed of five items (e.g. “I understand my life’s meaning” and “I am always looking to find my life’s purpose” respectively). Items are rated on a 7-point Likert scale from “1 - absolutely untrue” to “7 - absolutely true”. High correlations ( $r = .61$  to  $r = .74$ ) between MLQ-P and other meaning in life scales have been reported, and both the MLQ-P and MLQ-S have shown better discriminant validity than other meaning measures (Steger et al., 2006).

Finally, participants were asked to provide typical demographic data including age, gender, nationality and relationship status.

### **Procedure**

The survey, approximately 25-minutes in length, was administered online via the MTurk platform. Participants were assigned a unique identifier and no contact information was requested. Participants were provided with an information sheet and required to complete an informed consent form in order to participate. The consent form afforded participants all the protections of the Claremont Graduate University Institutional Review Board (IRB). Participants were informed that their participation was voluntary, that they could withdraw at any time, and potential risks and benefits of the study were set out. Participants were offered US \$0.50 to complete the questionnaire. On completion of the survey, participants were provided with a short explanation of the study.

## **RESULTS**

### **Love for FFA and LFA**

Hypothesis 1 predicted that in both samples participants would report statistically significant greater love for FFA than for LFA. This hypothesis was not supported when taking the samples together,  $t(241) = -1.042$ ,  $p = .30$  ( $M = 3.28$  versus  $3.25$  on a scale of 1 - 5, with 5 being high). However, when the samples were analyzed separately, a different picture emerged (see Figure 1). US participants reported loving LFA more than FFA ( $M = 3.05$  versus  $2.86$ ), with this difference being statistically significant:  $t(135) = -3.01$ ,  $p = .003$ . By contrast, Indian participants reported loving FFA more than LFA ( $M = 3.73$  versus  $3.63$ ), with this difference also being statistically significant:  $t(105) = 2.09$ ,  $p = .04$ .

As such, Hypothesis 1 was not supported overall or for the US sample, but it was supported for the Indian sample.

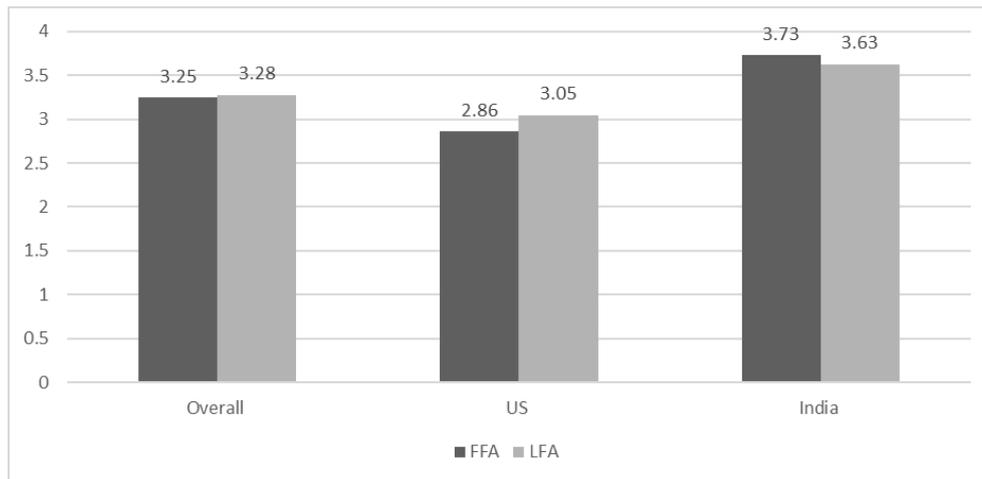


Figure 1. Mean love scores for FFA and LFA (Overall - all participants, n = 348; US sample only, n = 206; and Indian sample only, n = 142)

As a follow up, the authors compared US and Indian love scores for each of the FFA and LFA. As indicated in Figures 2 and 3, Indian participants reported greater love for all FFA than US participants, with the biggest differences observed in terms of love for my job, playing sports with others, and playing an instrument (all differences were statistically significant). Indian participants also reported greater love for all LFA, with the biggest differences observed in terms of love for shopping and watching TV with others (all differences were statistically significant except the difference in love for alcoholic beverages).

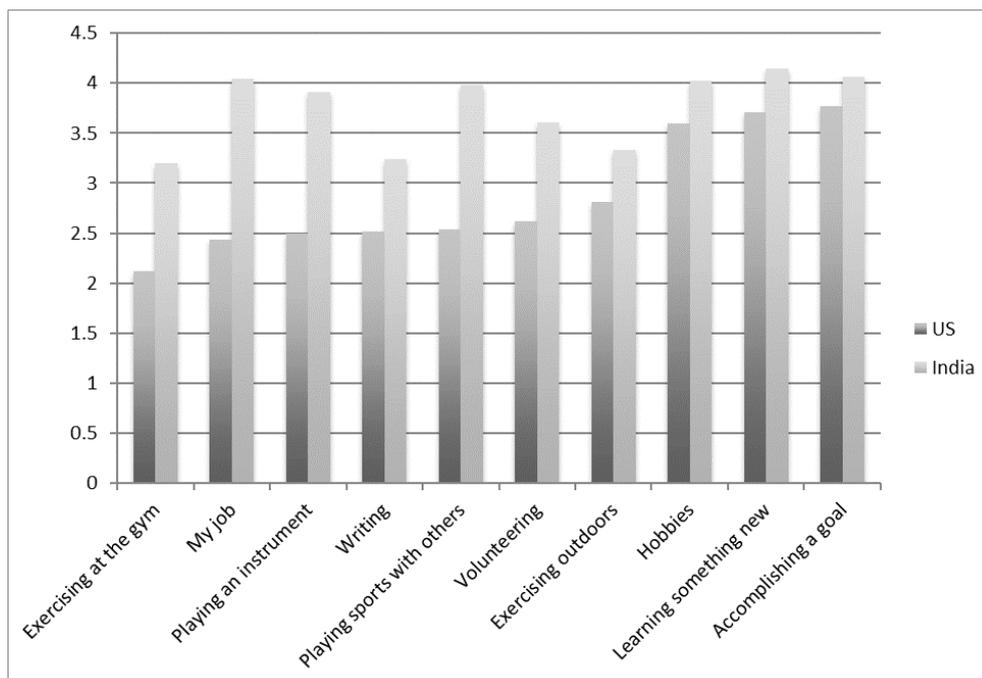


Figure 2. Comparison of US and Indian participant mean love scores for various FFA

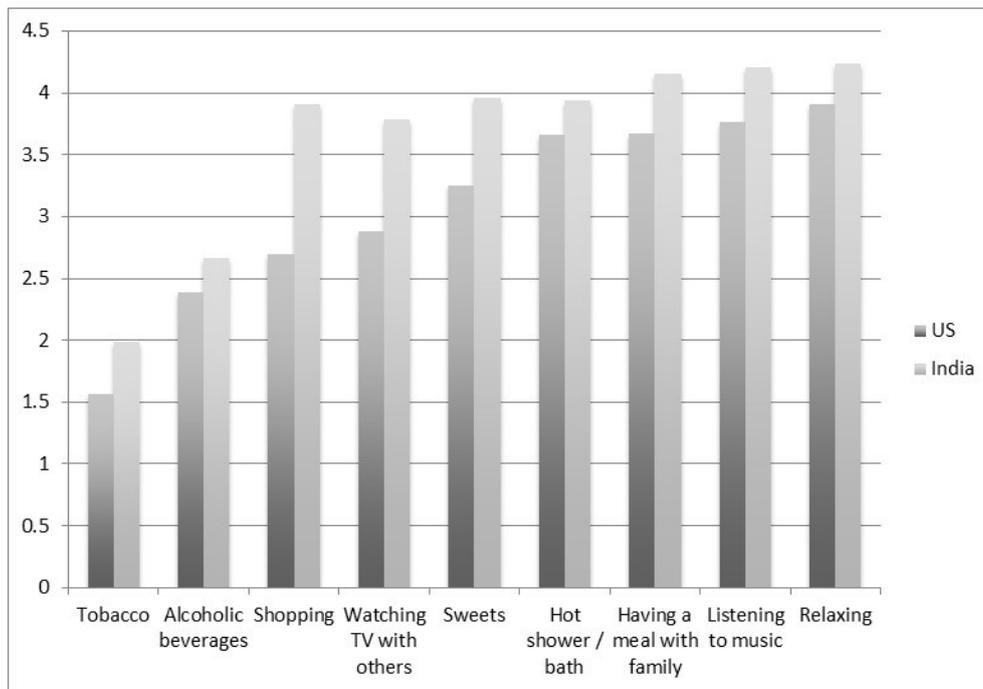


Figure 3. Comparison of US and Indian participant mean love scores for various LFA

### Love for FFA/LFA and Nationality

Hypothesis 2(a) predicted that there would be a statistically significant difference between US and Indian participants in love for FFA, such that Indian participants would report greater love for these activities than US participants. This hypothesis was supported:  $t(266) = -8.83, p < .001$ .

Hypothesis 2(b) predicated that there would be a statistically significant difference between US and Indian participants in love for LFA, such that US participants would report greater love for these activities than Indian participants. This hypothesis was not supported since Indian participants loved LFA more than their US counterparts:  $t(294) = -6.90, p < .001$ .

### Love for FFA, LFA and Age

Hypothesis 2 predicted that in both samples there would be a statistically significant *negative* relationship between love for FFA and age, and a statistically significant *positive* relationship between love for LFA and age. However, no significant correlations emerged ( $p > .05$ ). Hypothesis 2 was, therefore, not supported in either sample.

However, analyzing cohorts provided a more nuanced picture. Hypothesis 3(a) predicted that in both samples there would be a statistically significant difference between age cohorts in love for FFA, such that younger cohorts would report greater love for these activities than older cohorts. In the US sample 29.1% of participants were emerging adults (18 - 25 years), 60.2% were adults (26 - 54 years), and 10.7% were older adults (55+ years). A significant difference in love for FFA was found between the three cohorts in the US sample,  $F(2, 149) = 3.06, p = .05$ , such that older adults loved FFA the most ( $M = 3.23$ ) followed by emerging adults ( $M = 3.08$ ) and then adults ( $M = 2.72$ ). In the Indian

sample 40.1% of participants were emerging adults (18 - 25 years), 55.6% were adults (26 - 54 years), and just 4.2% were older adults (55+ years) (see Figure 4). There were no significant differences between the Indian cohorts in terms of love for FFA. Therefore, Hypothesis 3(a) was partially supported for the US sample but was not supported in the Indian sample.

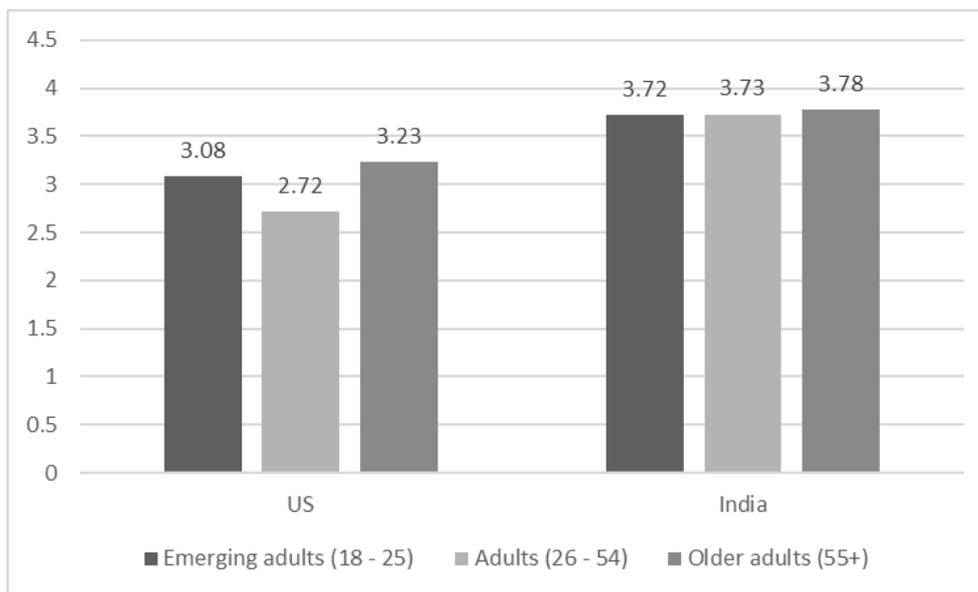


Figure 4. Comparison of age cohort mean love scores for FFA.

Hypothesis 3(b) predicted that in both samples there would be a statistically significant difference between age cohorts in love for LFA such that older cohorts would report greater love for these activities than younger cohorts. However, there was no significant difference between the cohorts in terms of love for LFA in either sample ( $p > .05$ ). Therefore, Hypothesis 3(b) was not supported in either case (see Figure 5).

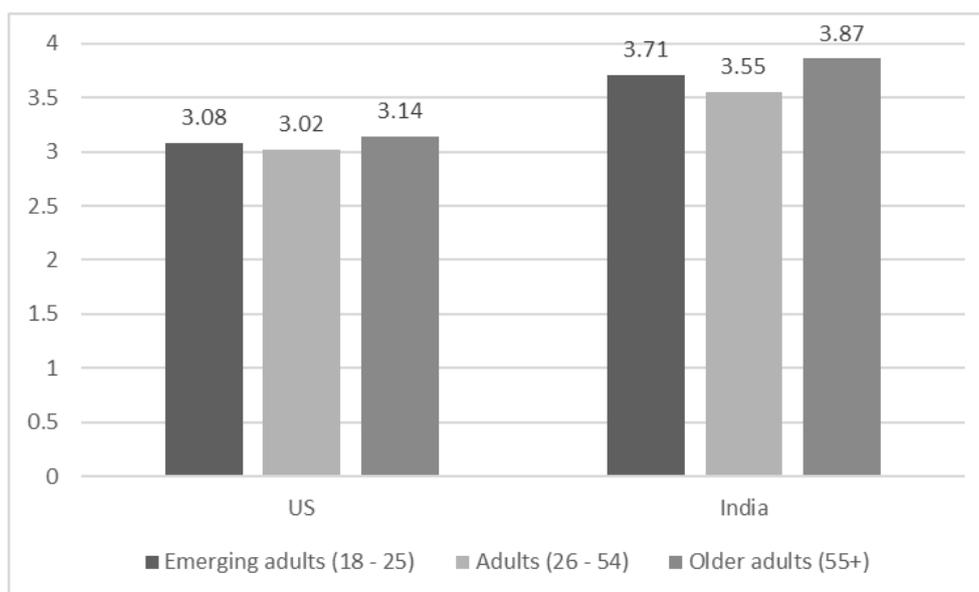


Figure 5. Comparison of age cohort mean love scores for LFA.

#### Love for FFA, LFA and Gender

Hypothesis 4(a) predicted that in both samples there would be a statistically significant difference between men and women in love for FFA, such that men would have higher

scores than women. The results indicated that US men loved FFA more than US women ( $M = 2.98$  versus  $2.77$ ) but Indian women loved FFA more than Indian men ( $M = 3.85$  versus  $3.66$ ). However, these differences were not statistically significant (US:  $t(129) = -1.31$ ,  $p > .05$ ; India:  $t(119) = 1.58$ ,  $p > .05$ ). Therefore, Hypothesis 4(a) was not supported.

Hypothesis 4(b) predicted that in both samples there would be a statistically significant difference between men and women in love for LFA, such that women would have higher scores than men. Although results indicated that women did score slightly higher than their male counterparts in both samples (US:  $M = 3.10$  versus  $2.99$ ; India  $M = 3.72$  versus  $3.58$ ), the differences were not statistically significant (US:  $t(175) = .87$ ,  $p > .05$ ; India:  $t(129) = -1.31$ ,  $p > .05$ ). As such, Hypothesis 4(b) was not supported for either sample.

### Love for FFA, LFA and Wellbeing Measures

Table 3 sets out the means and standard deviations of the various wellbeing measures (satisfaction with life, subjective health, subjective happiness, search and presence of meaning) for the US and Indian samples. As indicated, Indian participants had higher mean scores than US participants on all measures, and all differences were statistically significant (satisfaction with life:  $t(341) = -5.84$ ,  $p < .001$ ; subjective health:  $t(336) = -3.01$ ,  $p = .003$ ; subjective happiness:  $t(340) = -2.39$ ,  $p = .017$ ; search for meaning:  $t(344) = -4.92$ ,  $p < .001$ ; presence of meaning:  $t(339) = -4.20$ ,  $p < .001$ ).

**Table 3**  
**Means and standard deviations of various wellbeing measures**  
**for US and Indian samples**

	Country	M	SD
Subjective wellbeing	US	22.09	7.19
	India	26.09	5.58
Subjective health	US	3.51	0.97
	India	3.80	0.80
Subjective happiness	US	18.75	5.76
	India	20.00	3.94
Search for meaning	US	23.13	7.47
	India	26.34	4.71
Presence of meaning	US	23.21	7.09
	India	25.99	5.13

Notes:

- Subjective wellbeing rated on a scale of 5 - 35 (with 35 being high).
- Subjective health scale rated on a scale of 1 - 5 (with 5 being high - original items were reversed scored).
- Subjective happiness scale rated on a scale of 4 - 28 (with 28 being high).
- Search for meaning scale rated on a scale of 5 - 35 (with 35 being high).
- Presence of meaning scale rated on a scale of 5 - 35 (with 35 being high).

Hypothesis 6(a) predicted that in both samples love for FFA would be significantly and positively related to all wellbeing measures. As set out in Table 4, this hypothesis was supported in the US sample. As set out in Table 5, in the Indian sample, love for FFA was positively and significantly related to all wellbeing measures except subjective health to which it was unrelated. As such, Hypothesis 6(a) was partially supported for the Indian sample.

Hypothesis 6(b) predicted that in both samples love for LFA would be significantly and negatively related to the wellbeing variables. As set out in Table 4, in the US sample, Love for LFA was positively and significantly related to all outcome measures except satisfaction with life to which it was unrelated. As set out in Table 5, in the Indian sample, Love for LFA was positively and significantly related to all wellbeing measures except subjective health and subjective happiness to which it was unrelated. As such, Hypothesis 6(b) was not supported.

Note that in both samples the correlations between love for FFA and wellbeing measures were stronger than the correlations between love for LFA and wellbeing measures.

**Table 4**  
**Relationships between love for FFA, LFA,**  
**and wellbeing measures (US sample, n = 206)**

	1	2	3	4	5	6
1. FFA						
2. LFA	.802**					
3. Satisfaction with life	.332**	.141				
4. Subjective health	.274**	.170*	.389**			
5. Subjective happiness	.378**	.157*	.625**	.272**		
6. Search for meaning	.185*	.264**	-.099	.029	-.156*	
7. Presence of meaning	.336**	.172*	.628**	.254**	.603**	-.171*

Note: \*p < .05, \*\* p < .01, \*\*\* p < .001

**Table 5**  
**Relationships between love for FFA, LFA,**  
**and wellbeing measures (Indian sample, n = 142)**

	1	2	3	4	5	6
1. FFA						
2. LFA	.656**					
3. Satisfaction with life	.445**	.395**				
4. Subjective health	.098	.091	.302**			
5. Subjective happiness	.198*	.124	.507**	.318**		
6. Search for meaning	.260**	.265**	.120	.002	.131	
7. Presence of meaning	.293**	.227*	.566**	.143	.447**	.008

Note: \*p < .05, \*\* p < .01, \*\*\* p < .001

## DISCUSSION

### Love for FFA/LFA and the Role of Culture

The first aim of the study was to explore whether participants loved FFA or LFA more. While previous literature provides evidence that people are happy engaging in both types of activities, and report love and passion for both, there is evidence that people are particularly drawn to FFA because they are related to learning, growth, wellbeing and harmonious passion. There is arguably an evolutionary advantage for an individual to develop an interest in, or even love for, activities that facilitate growth and complexification across the lifespan (Csikszentmihalyi, 1990, 1997; Csikszentmihalyi & Asakawa, 2016). Hypothesis 1 was supported for Indian participants but not US participants (particularly those aged 26 to 54 - see further below), who loved LFA more than FFA. Why might this be the case? Four possible explanations are discussed in turn.

The first possible explanation relates to the modernization of the US as compared to India, which is an emerging economy. As discussed, previous research has noted shifts in preferred activities (including flow activities) as societies modernize. As societies become more affluent, and modern conveniences are added, people begin to move away from some FFA (e.g. working outdoors and engaging in traditional arts and crafts) towards more passive leisure activities (e.g. watching TV and socializing). As discussed, this has been observed in terms of cohorts (Delle Fave & Massimini, 1988) as well as people immigrating from India to Europe (Swarup & Delle Fave, 1999, as cited in Delle Fave et al., 2011). It may be that, on average, people in the US have more time for, and greater access to, passive leisure activities and consumable media than people in India. US residents may also be subject to more cultural scripts via advertising, television shows and movies that promote LFA, making it more difficult to generate the motivation and energy required to engage in FFA. Further research is required to test these possibilities.

Second, the difference between the US and Indian participants in terms of love for FFA versus LFA might be related to differential exposure or response to environmental stress. As discussed, recent research has found an inverted U relationship between cortisol and flow, suggesting that at higher stress levels it is more difficult to enter the flow state (Peifer et al., 2014; see also Keller, 2016). It is possible that the US participants in this study reported loving LFA more than FFA because they were less able to manage their stress or alternatively, since what matters in flow is a *perceived* balance of challenge and skill, perhaps US participants perceived that they are subject to greater challenges and/or perceive that they do not have sufficient skills to meet these challenges. It has been suggested that high external demands and ego threats are negatively related to in-

trinsic motivation and flow, but that these demands or threats may promote flow if the individual's perceived skill is high compared to the difficulty of the task (Deci & Ryan, 2000; Engeser & Rheinberg, 2008). If this were the case, then it could be that US participants considered FFA (which are typically characterized by high challenge and high skill) to be less appealing than LFA.

It is also worth noting that Indian participants reported greater love for each of the FFA and LFA, and scored higher on all measures of wellbeing compared to US participants. It is possible that the experience of love - for *any* activities - accounts for the wellbeing outcomes observed. Love elicits oxytocin and dopamine, which suppress the fight or flight response (Zeki, 2007). As such, it is possible that love acts as a buffer against stress that might otherwise curtail the ability to enter the flow state given the inverted U shaped relationship between cortisol and flow (Peifer, Schulz, Schächinger, Baumann, & Antoni, 2014). In addition, dopamine is associated with flow proneness (de Manzano, Cervenka, Jucaite, Hellenäs, Farde, & Ullén, 2013). In other words, it may be Indian participants' capacity to love that predisposes them to FFA, and allows them to benefit from the positive effects of these typically high challenge, high skill activities. Future researchers should examine whether there are any differences in real or perceived stress levels and/or abilities to respond to stress between residents of the two countries, and whether love promotes the ability to enter the flow state.

Third, it is possible that there are personality trait differences between US and Indian participants. The amount and intensity of flow experienced can vary considerably from one individual to another, and this variation is likely to be accounted for by both individual traits and societal factors (Teng, 2011; Ullén et al., 2012). At the individual level, those with autotelic personalities tend to experience flow more frequently (Csikszentmihalyi, 1990) and a recent study found that flow proneness was positively related to the Big 5 personality trait of conscientiousness and negatively related to neuroticism (Ullén et al., 2012). One can only speculate as to differential levels of autotelic personality (and therefore achievement orientation and intrinsic motivation), conscientiousness, low neuroticism or even dopamine receptors (individual traits associated with flow) amongst people from the two countries. Future researchers have an opportunity to explore any such trait-like explanations, although trait arguments do not account for differences observed between participants living in India and Indians who have emigrated to Europe (Swarup & Delle Fave, 1999, as cited in Delle Fave, Massimini, & Bassi, 2011).

Finally, it is possible that cultural factors account for the difference observed. As mentioned, previous researchers have argued that people in the West are typically drawn to flow activities that produce external stimuli, while Eastern cultures have flow producing

practices that involve training the mind and focusing attention on the human experience (Csikszentmihalyi 1990; Csikszentmihalyi & Asakawa, 2016). It is possible that in the US, media and electronic devices have replaced flow-producing activities in providing the external stimuli that American residents crave. Perhaps in India people are less susceptible to these distractions because the culture has cultivated inwardly focused flow activities. Others have suggested that the collectivist orientation of non-Western societies facilitates intrinsic motivation, an appreciation of growth and development (as opposed to personal achievement and success which characterizes individualistic cultures), and therefore flow (Delle Fave, Massimini, & Bassi, 2011). For example, a recent study indicated that in Japan, concerns about living up to societal expectations (known as *Jujitsu-kan*) facilitate and enhance the flow experience for Japanese people, whereas the same concerns might interrupt the flow experience in Western cultures (Csikszentmihalyi & Asakawa, 2016). Further research ought to be conducted to assess the degree to which these cultural variables may account for the differences observed between the two samples in this study.

### **Love for FFA, LFA and Age**

No significant relationship was found between love for FFA, LFA and age, suggesting that age is not one of the factors that influence the flow activities that people love most. This finding calls into question the suggestion that dopamine receptors decline with age and, therefore that flow proneness decreases through the lifespan. In line with previous research, this study suggests that love for FFA and LFA is relatively consistent as we age.

However, the picture was more nuanced at the cohort level for the US sample (there were no significant differences between Indian cohorts). First, US adults (26 - 54 years in age) had the lowest love for FFA across all cohorts for both samples. It might be argued that US adults in this cohort have less “free time” and/or experience higher levels of stress than their younger and older counterparts. Adults in this cohort often work full time and have families to raise. Perhaps these responsibilities mean that US middle adults have little attention and/or energy for FFA. However, this does not explain why the same was not true for middle adults in the Indian sample. Perhaps Indian participants are able to mitigate the effects of these stresses better than US participants can.

Another possible explanation might relate to the fact that just a third of US workers are actively engaged at work, but even fewer Indian workers (just 9%) are actively engaged in their jobs. If the vast majority of Indian residents do not experience high challenge and high skill at work, they may seek out FFA elsewhere, and therefore report greater love for FFA. Future research should be undertaken to understand what might be taking place with middle adults in the US that results in a statistically significant decline in

their love for FFA as compared to emerging and older adults in the US, while this is not the case for participants in India.

Second, older adults in the US (55+) had the highest love for FFA amongst the US cohorts. Again, this calls into question the suggestion that flow proneness declines with age. Alternatively, it is possible that older adults (55+) in the US regain their love for FFA in order to optimize their development and compensate for age related declines in functioning. Baltes (1997) suggests that for people to continue to grow and develop through the lifespan, additional resources are required as we age to offset declining biological functioning. In short, Baltes' theory states that development through the lifespan is dependent upon three processes: selection (of directed goals), optimization (of the means to achieve high functioning and positive outcomes) and compensation (the response to loss of such means). It may be that older adults in the US sample reported the greatest love for FFA because they were seeking to optimize their experience (learning, growing and thriving) following middle adulthood, and compensate for declines in biological functioning. Further research is required to test this possibility.

### **Love for FFA, LFA and Wellbeing**

The results indicated that love for both FFA and LFA was positively related to a number of wellbeing measures. Love for FFA produced the stronger relationships in line with previous findings that activities that lead to growth also lead to optimal functioning (Carpentier, Mageau, & Vallerand, 2012; Mao et al., 2016).

Two questions remain for future research. First, why was love for LFA also positively related to a number of wellbeing measures? As mentioned above, it may be that love - for any activities or indeed for almost anything - accounts for these positive outcomes.

Second, why would individuals in the US report greater love for LFA if FFA were more strongly related to these participants' satisfaction with life, subjective health, subjective happiness, and presence of meaning?

### **Limitations and Future Research**

The current study raises a number of interesting questions (discussed above) that ought to be explored further. In addition, the study is subject to five primary limitations.

First, both samples were drawn from MTurk workers. While acceptable results have been obtained in the social sciences using MTurk samples (Buhrmester, Kwang, & Gosling, 2011), it is possible that people who largely work from home and/or online may have more opportunity or more temptation to engage in passive leisure activities than those who are engaged in more active work outside of the online environment. This possibility may have distorted the results in this study (although this still raises the question as to

why there might be a difference in love for FFA between US and Indian MTurk participants). Future research should replicate the study using non-MTurk samples.

Second, the current study was limited to a US and Indian sample. Caution should be exercised in extrapolating the results to other nationalities and cultures, and in generalizing about (apparently) individualistic and collectivist cultures. Further research should be conducted with other cultures and nationalities.

Third, the items used in the current study reflected the original “Frequent Flow” / “Low Flow” Activities by Csikszentmihalyi (1997) but were not identical. The authors were, therefore, required to make educated decisions about which category an activity might fall into (e.g. Travelling was coded as “Sometimes Flow” in the current study. However, it could conceivably be considered a FFA or LFA depending on the context). Future research should explore love for different activities that might be considered FFA and LFA.

Fourth, participants were asked how much they *loved* each activity. It is possible that this word in conjunction with various activities has different meanings in different cultures and contexts. Future research ought to compare and contrast responses regarding the activities that people love, like, have a passion for, and have an interest in. In addition, future researchers would be wise to conduct these studies in different languages in order to uncover any linguistic effects that might be operating.

Finally, the authors divided the samples into three age cohorts. Different cohorts could have been chosen (e.g. comparing Millennials, Generation X and Baby Boomers). Future research ought to examine whether different age cohorts produce different results in various cultures.

### **Conclusions and Applications**

Flow experiences are theorized to lead to increased well-being, psychological complexity and creativity (Csikszentmihalyi, 1997). However, engaging in activities that have clear and proximate goals, a balance of challenge and skill, and provide immediate feedback requires attention and energy (Csikszentmihalyi, 1997). The present study is the first to explore how much participants love activities that frequently produce flow experiences compared with love for activities that are unlikely to produce flow. The findings from the current study provide two main takeaways.

First, the results largely support previous research linking flow experiences and well-being. Love of FFA was significantly correlated with well-being for both US and Indian participants. Second, previous cross cultural research on flow has found that while the conditions and subjective experience are remarkably similar across cultures, the types of activities reported as flow experiences can vary according to opportunities provided by

the socio-cultural environment (Delle Fave, Massimini, & Bassi, 2011). The current study goes a step further and suggests that as societies modernize, love for FFA may begin to wane. The United States has a more modern society, and more established economy than India does currently. However, US participants in the current study loved LFA more than FFA, with the opposite being true for participants from India. It may be that as a society modernizes, and constituents shift from producers to consumers, the number of opportunities for enjoyable but low-challenge LFA increases, with a corresponding decrease in love for FFA. If we wish to continue increasing in complexity as a species, then societies will need to balance the benefits of modernization with the need to provide citizens with opportunities to seek challenges and develop skills.

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